

WHAT IS CLAIMED IS:

1. A method for indicating available modifications to a geometric object in a computer drawing program, comprising:

displaying a three-dimensional geometric object in a computer drawing program;

5 and

displaying a first oriented three-dimensional glyph that provides a direct visual indication of valid movement direction during direct manipulation of the three-dimensional geometric object.

10 2. The method of claim 1 wherein the valid movement direction is a constraint on a permissible action.

3. The method of claim 1 wherein the first oriented three-dimensional glyph is a grip that has a defined position and an active area within which a pointing
15 device will "snap" to that position.

4. The method of claim 1 wherein an orientation and direction of the first oriented three-dimensional glyph indicate how cursor movement will be constrained.

20 5. The method of claim 1 further comprising displaying a second oriented three-dimensional glyph on the three-dimensional geometric object, wherein the second oriented three-dimensional glyph is differentiable from the first oriented three-dimensional glyph.

6. The method of claim 1 wherein the direct manipulation occurs through user interaction with the computer drawing program.

5 7. The method of claim 1 further comprising manipulating the three-dimensional object based on direct manipulation of the first oriented three-dimensional glyph in the valid movement direction.

8. A system for indicating available modifications to a geometric object in a computer drawing program comprising:

(a) a computer system having a memory and a data storage device coupled thereto;

(b) a drawing program executing on the computer system, the drawing program configured to:

15 (i) display a three-dimensional geometric object; and

(ii) display a first oriented three-dimensional glyph that provides a direct visual indication of valid movement direction during direct manipulation of the three-dimensional geometric object.

20 9. The system of claim 8 wherein the valid movement direction is a constraint on a permissible action.

10. The system of claim 8 wherein the first oriented three-dimensional glyph

is a grip that has a defined position and an active area within which a pointing device will “snap” to that position.

11. The system of claim 8 wherein an orientation and direction of the first
5 oriented three-dimensional glyph indicate how cursor movement will be constrained.

12. The system of claim 8 wherein the drawing program is further configured
to display a second oriented three-dimensional glyph on the three-dimensional geometric
object, wherein the second oriented three-dimensional glyph is differentiable from the
10 first oriented three-dimensional glyph.

13. The system of claim 8 wherein the direct manipulation occurs through
user interaction with the computer drawing program.

14. The system of claim 8 wherein the drawing program is further configured
15 to manipulate the three-dimensional object based on direct manipulation of the first
oriented three-dimensional glyph in the valid movement direction.

15. An article of manufacture comprising a program storage medium
20 readable by a computer and embodying one or more instructions executable by the
computer to perform a method for indicating available modifications to a geometric
object in a computer drawing program, the method comprising:

displaying a three-dimensional geometric object; and

displaying a first oriented three-dimensional glyph that provides a direct visual indication of valid movement direction during direct manipulation of the three-dimensional geometric object.

5 16. The article of manufacture of claim 15 wherein the valid movement direction is a constraint on a permissible action.

10 17. The article of manufacture of claim 15 wherein the first oriented three-dimensional glyph is a grip that has a defined position and an active area within which a pointing device will “snap” to that position.

15 18. The article of manufacture of claim 15 wherein an orientation and direction of the first oriented three-dimensional glyph indicate how cursor movement will be constrained.

20 19. The article of manufacture of claim 15, wherein the method further comprises displaying a second oriented three-dimensional glyph on the three-dimensional geometric object, wherein the second oriented three-dimensional glyph is differentiable from the first oriented three-dimensional glyph.

 20. The article of manufacture of claim 15 wherein the direct manipulation occurs through user interaction with the computer graphics program.

21. The article of manufacture of claim 15 wherein the method further comprises manipulating the three-dimensional object based on direct manipulation of the first oriented three-dimensional glyph in the valid movement direction.